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ABSTRACT

Because technical education represents a considerable expenditure of Ohio state resources, an annual survey is conducted to determine the employment status of technical school graduates. Every year each institution offering technical education programs is asked to report the total number of degrees awarded in each program offered, the number of those graduates placed in jobs relating or not relating to their technical training, and the number of graduates reporting themselves as available for employment but unemployed. Statewide findings, based on an overall response rate of 89.4%, included the following: (1) 47 postsecondary institutions awarded 12,249 technical associate degrees in 1983, a 3.8% increase over 1982; (2) degrees in the business technologies accounted for slightly more than 40% of all degrees awarded; (3) 10.7% of the graduates were continuing their education, 13.3% were unavailable for employment, and 91.5% of those available for employment were working; and (4) Ohio's associate degree graduates experienced an unemployment rate only slightly more than half of the national rate for persons aged 20-24. Findings are provided for business, engineering/industry, health, agricultural/natural resources, and public service technolgoies, and problems with the performance of particular programs are identified. (EJV)

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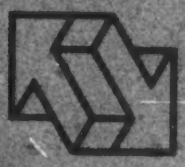

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TECHNICAL EDUCATION PLACEMENT REPORT

FY 1983

APRIL 12, 1985

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TECHNICAL EDUCATION PLACEMENT REPORT

FISCAL YEAR 1983

Report to the Chancellor

Office of Two-Year Campuses
Ohio Board of Regents

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April 12, 1985

Mr. William B. Coulter, Chancellor
Ohio Board of Regents
3600 State Office Tower
30 East Broad Street
Columbus, Ohio 43215

Dear Mr. Coulter:

I am pleased to transmit to you a report of the findings of our annual survey of the job placement of technical education graduates. This report includes the technical associate degree graduates receiving degrees during the 1983 academic year.

In view of the primary purpose of technical education, the annual report of job placement is an important measure of program effectiveness. In addition to demonstrating accountability for the considerable resources invested by the State of Ohio in technical education programs, the annual placement report provides the Board with both labor market and institutional information for use in evaluating the need for additional programs throughout the state or in a given area.

The FY 1983 report bears the unmistakable imprint of the economic recession which has hit our state particularly hard. Yet, these findings show that, even during a recession, technical education graduates encounter greater success in the labor market than the population as a whole, and far greater success than those entering the labor market without such an education. Whatever else this report reveals, it shows clearly that technical education remains a good investment for both students and the state.

Sincerely,

Theresa A. Powell

Theresa A. Powell, Ph.D.
Administrator, Two-Year Campuses
Academic Programming

rcm

OBR 1001

TECHNICAL EDUCATION PLACEMENT REPORT

FISCAL YEAR 1983

INTRODUCTION

In Autumn Quarter 1983, approximately 101,000 students were enrolled in the technical associate degree programs offered on fifty-two state-assisted college and university campuses. In 1983 alone, the State of Ohio spent in excess of $67 million in direct support of technical education, and since 1975 has invested over $20 million in special appropriations for the technical equipment required by such programs. Technical education therefore represents a considerable expenditure of state resources.

The primary purpose of technical education is the preparation of people for employment at the conclusion of up to two years of study. Unlike that of many educational efforts with more general and sometimes diffuse goals, the continuing effectiveness of technical education can be objectively assessed by an annual survey of the employment status of graduates of technical programs.

Each year the Office of Two-Year Campuses asks all institutions offering technical associate degree programs to conduct such a survey. The following is a report of the results of the survey of the employment status of technical associate degree graduates receiving degrees from Summer Quarter 1982 to Spring Quarter 1983.

Purposes of the Survey

The annual placement report serves a number of purposes of the Ohio Board of Regents. As the state agency responsible to the citizens of Ohio for the effective expenditure of the state's resources for higher education, the Regents have an interest in gathering information regarding program effectiveness and sharing this information with the public and their elected representatives.

As the planning and coordinating agency responsible for approving new programs and for recommending elimination of programs that are no longer needed, the Regents have an ongoing need for current data on job placement. The approval of technical education programs rests upon a finding of a labor market need as a necessary condition. Once this labor market need has been fulfilled, programs designed for this specific purpose can be discontinued. Institutions offering technical programs both understand and support such a policy. At the same time, the placement report can be used to show the extent to which current programs are unable to meet the volume of the market's needs, and can be used by the Regents in recommending the addition of new programs in a specific area, or in evaluating recommendations on policies which might have the effect of further reducing the production of graduates in occupations already demonstrating shortages.

The placement report can also be used as a triggering mechanism for identifying programs in need of detailed review on a statewide basis. A consistent pattern of job

placement below the level expected for technical programs could be interpreted as evidence justifying a lateral program review as a complement to the institutional program review currently conducted by the Regents.

Finally, the Regents have an interest, again as stewards of the state's resources, in preventing unwarranted program duplication. Two or more technical programs in a given labor market may not necessarily be a problem if the labor market can absorb all the graduates. The placement report provides a reading of the extent to which a given labor market is saturated with a particular type of program graduate, and can therefore be used to trigger recommendations for the elimination of one such program due to duplication.

Limitations

Some care must be exercised in interpreting some of the findings in the annual placement report. While prima facie inferences regarding continued program need may reasonably be drawn from these findings, lower than expected job placement does not necessarily indicate an absence of quality, need, or effectiveness. There may be structural peculiarities of a given labor market, such as an age requirement for job entry, which defers placement. The market for a particular type of graduate may be temporarily depressed for reasons quite apart from need, particularly in public service technical occupations, but from which recovery is expected within a reasonable period of time. Some technical programs

address statewide labor market needs requiring graduates to relocate - a significant number of whom are reluctant to do so. Finally, the point in time at which the survey is made varies among institutions. Some survey graduates immediately after graduation with no follow-up; such a procedure, if done by a large institution, may artificially and negatively distort a true reading.

A final limitation on interpreting the data contained in this report must also be mentioned. A comparison of the total number of associate degrees awarded during Fiscal Year 1983 (12,249) to the total number of freshmen enrolled in the Autumn Quarter of 1981 (99,745) might be interpreted as an alarmingly high rate of attrition. While such a comparison is commonly used as a rough measure of attrition, it is not particularly in and of itself enlightening, nor may conclusions be drawn from such a figure. First, this rate itself is comparable to national averages for all students enrolling in two-year colleges. Second, an attrition rate is not necessarily indicative of program failure inasmuch as nearly one-third of all students do not enroll in Ohio's two-year colleges for the purpose of completing a degree (Harbaugh, 1980), and many students receive the training they need for entry-level employment prior to completing degree requirements. For these and other reasons, inferences regarding attrition based upon this simple comparison should not be drawn. This office is sensitive to evidence of abnormally high attrition during the five-year review and raises concerns when warranted, but this report should not

be used to support any conclusions regarding attrition apart from other instrumentation specifically designed for that purpose.

Procedures and Methodology

In January of each year the Office of Two-Year Campuses requests a placement report from each institution offering technical education programs. Institutitons are asked to report the total number of degrees awarded in each program offered, the number of those graduates placed in jobs related to their technical training, the number placed in jobs not directly related to their training, and the number of graduates reporting themselves as available for employment but unemployed. We also ask institutions for the number of their graduates who are unavailable for employment either because they are furthering their education or for other reasons, such as military service, parenting, etc.

To provide complete and accurate information for this report, institutions are encouraged to survey their graduates two months after graduation with follow-up inquiry made of non-respondents three and five months later if necessary. Specific procedures for the conduct of the surveys are, however, left in the hands of the institutions, a number of which do not adhere to the above-recommended survey schedule. Response rates therefore vary widely. The total response rate to this year's placement survey, however, is 89.4 percent - a level of response more than adequate for the purposes of this study and higher than the response rate

reported by many state higher education agencies conducting centralized statewide surveys.

FINDINGS

The results of the Fiscal Year 1983 technical graduate placement survey are summarized as follows:

Degrees Awarded and Rate of Response

In 1983, forty-seven colleges, universities, and university branch campuses awarded 12,249 technical associate degrees, a 3.8 percent increase over the Fiscal Year 1982 total (Table 1). Of these, a total of 10,952 graduates (or 89.4 percent) responded to the placement survey.

The growth in the total number of technical associate degrees awarded was not evenly distributed among the five categories of technical programs. Degrees in the business technologies accounted for slightly more than 40 percent of all degrees awarded, and were 5.6 percent above the number awarded in 1982. The number of degrees awarded in the engineering and industrial technologies increased 7.1 percent over the previous year and degrees awarded in the health technologies rose by 6.8 percent. The public service and agricultural technologies suffered declines in the number of degrees awarded in 1983 by 13.7 percent and 11.6 percent, respectively.

The relative contribution of the four types of two-year institutions to the total number of degrees awarded changed slightly from 1982 with the following percentages of the

TABLE 1
1982 - 1983
TECHNICAL PROGRAM GRADUATE JOB PLACEMENT
ANALYSIS BY TYPE OF CAMPUS AND TECHNICAL EDUCATION CATEGORY

		PROGRAMS	DEGREES GRANTED	RESP	%	FURTHER EDUCN	%	OTHERWISE NOT AVAILABLE	%	AVAIL FOR EMPLOY	%	EMPLOYED	%	NOT EMPLOYED	%
COMMUNITY	BUSINESS	59	1278	1044	81.7	104	10.0	14	1.3	926	88.7	827	89.3	99	10.7
	ENGINEERIN	47	568	469	82.6	58	12.4	8	1.7	403	85.9	371	92.1	32	7.9
	HEALTH	41	1082	873	80.7	21	2.4	23	2.6	829	95.0	805	97.1	24	2.9
	AG-NAT RES	3	14	11	78.6	1	9.1	0	0.0	10	90.9	9	90.0	1	10.0
	PUBLIC SER	20	252	206	81.7	27	13.1	5	2.4	174	84.5	162	93.1	12	6.9
	TOTAL	170	3194	2603	81.5	211	8.1	50	1.9	2342	90.0	2174	92.8	168	7.2
TECHNICAL	BUSINESS	101	2142	1977	92.3	128	6.5	66	3.3	1783	90.2	1612	90.4	171	9.6
	ENGINEERIN	105	1632	1475	90.4	118	8.0	43	2.9	1314	89.1	1185	90.2	129	9.8
	HEALTH	53	1336	1232	92.2	31	2.5	29	2.4	1172	95.1	1136	96.9	36	3.1
	AG-NAT RES	15	235	220	93.6	29	13.2	4	1.8	187	85.0	154	82.4	33	17.6
	PUBLIC SER	28	307	292	95.1	29	9.9	6	2.1	257	88.0	235	91.4	22	8.6
	TOTAL	302	5652	5196	91.9	335	6.4	148	2.8	4713	90.7	4322	91.7	391	8.3
BRANCHES	BUSINESS	50	634	565	89.1	64	11.3	14	2.5	487	86.2	417	85.6	70	14.4
	ENGINEERIN	26	226	202	89.4	37	18.3	0	0.0	165	81.7	148	89.7	17	10.3
	HEALTH	12	366	362	98.9	10	2.8	15	4.1	337	93.1	336	99.7	1	.3
	AG-NAT RES	14	213	207	97.2	22	10.6	5	2.4	180	87.0	168	93.3	12	6.7
	PUBLIC SER	12	79	74	93.7	21	28.4	1	1.4	52	70.3	50	96.2	2	3.8
	TOTAL	114	1518	1410	92.9	154	10.9	35	2.5	1221	86.6	1119	91.6	102	8.4
URBAN TECH	BUSINESS	26	889	799	89.9	159	19.9	20	2.5	620	77.6	544	87.7	76	12.3
	ENGINEERIN	17	426	407	95.5	207	50.9	5	1.2	195	47.9	178	91.3	17	8.7
	HEALTH	11	339	326	96.2	24	7.4	22	6.7	280	85.9	248	88.6	32	11.4
	PUBLIC SER	12	231	211	91.3	86	40.8	5	2.4	120	56.9	103	85.8	17	14.2
	TOTAL	66	1885	1743	92.5	476	27.3	52	3.0	1215	69.7	1073	88.3	142	11.7
TOTAL		652	12249	10952	89.4	1176	10.7	285	2.6	9491	86.7	8688	91.5	803	8.5

total, in order: Technical colleges, 46.1 percent; community colleges, 26.1 percent; urban university technical centers, 15.4 percent; and university branch campuses, 12.4 percent.

The overall response rate of 89.4 percent was the highest ever recorded for this study. Response rates by category for the past three years are as follows:

	1983	1982	1981
Business	88.7	86.2	83.3
Engineering	89.5	86.7	84.6
Health	89.4	90.1	85.6
Agriculture/Natural Science	94.8	90.1	89.1
Public Services	90.1	88.1	82.2

These rates are sufficiently close to the statewide response as to put to rest any fears of results skewed by over or under response in any particular technical category.

Number Furthering Education

Of the 10,952 respondents, 1,176 (10.7 percent) reported they were continuing their education, and therefore were unavailable for employment. This percentage is slightly below the average in 1982. A relatively low level of transfer from technical education programs to baccalaureate degree programs is both normal and appropriate to the objectives of technical education.

As might be expected, technical graduates of university branches are somewhat more likely to transfer to baccalaureate programs than are community college and technical

college graduates. The four urban university technical centers reported that more than one out of four of their technical program graduates transfer to baccalaureate programs. If 27.3 percent of their technical program graduates are really transferring to baccalaureate programs, there may be cause for concern. On the one hand, these students may be the "hidden unemployed," i.e., forced to extend an education they had hoped to conclude in two years due to inability to find employment. On the other hand, such students may have been misadvised into technical programs at the point of initial enrollment. Unless a technical associate degree program is specifically required for admission to a baccalaureate degree program in a technology (of which there are very few), students with baccalaureate degree aspirations are better advised to pursue the pre-baccalaureate, lower-division requirements of the baccalaureate program rather than the technical associate degree, which itself is designed for an entirely different purpose.

General Employment

Subtracting from the total number of respondents the 13.3 percent who reported they were unavailable for employment for any reason, 9,491 associate degree graduates entered the labor market upon graduation. Of these, 8,688 were placed in jobs for a total placement percentage of 91.5 percent. This total percentage is 9.8 percent above the 1982 final placement rate. The unemployment rate for graduates of technical associate degree programs last year was

8.5 percent, as compared to a rate of 10.9 percent the previous year, and 8.3 percent in 1981. When compared to the high rate of unemployment for the state as a whole in the period during which most of these graduates were placed in jobs, such a rate of unemployment, while higher than we would hope, was still lower than that for the population as a whole. This rate of unemployment was also 6 percent less than the national unemployment rate for workers of the same age as the typical associate degree graduate.

Relative improvements were made in 1983 in placement rates in each technical category except health, which remained the same, and agriculture, which declined. Engineering and industrial graduates bore the brunt of the recession in 1982 with the highest unemployment rate among the technical categories, but they showed a marked improvement in 1983. Their unemployment rate in 1983 was 9.4 percent. Business and public service graduates also showed improvement. Their unemployment rates were 10.9 percent and 8.8 percent, respectively.

Technical-Related Employment by Program

While overall placement rates for programs designed for job preparation provide the Board of Regents with one way of gauging the general success of technical education, a different standard is used to assess the continued need for specific types of programs.

An overall placement rate is a satisfactory measure of the achievement of the general objective of employment at

the end of the associate degree. The need for a specific program, however, can better be assessed by a closer examination of the type of jobs in which graduates are placed. We recognize that not every person capable of completing degree requirements will be competitive enough in the particular labor market he/she has chosen to be placed immediately in a job related to his/her training. We also recognize that some graduates will choose positions that are not necessarily related to the specific training they received for a variety of reasons; e.g., changed career interest, changed career goals, opportunities for higher earnings than the original career choice would have generated, family circumstances, etc. While graduates placed in unrelated jobs are not necessarily the result of program "failure," the Regents' Office of Two-Year Campuses has adopted the position that a satisfactory demonstration of the continued need for technical programs designed to prepare specific technicians rests upon evidence that at least three out of four graduates of such programs are placed in jobs specifically related to their training.

In the aggregate, the 75 percent standard was met in 1983, but by the barest of margins. Only one category (Health Technologies) exceeded the standard. Technical associate degree graduates had greater difficulty locating jobs related to their technology in 1983 than 1982. The percent of FY 1983 graduates who located employment in the fields for which they were trained is 75.9 percent, as compared to 76.4 percent in 1982. The 1980 prerecession

technical placement rate was 83.4 percent.

Business Technologies

Technical placement of business technology graduates declined by 1.2 percent from FY 1982 (Table 2). Several programs in this category showed improvement. Four of these (Graphic Arts, Purchasing, Wholesale, and Financial Management) gained more than 10 percent over the 1982 rate. The following programs, however, have been below the placement standard for three successive years (Table 3):

Accounting
Advertising
Business Management
Commercial Art
Data Processing
Real Estate
Transportation

A thorough review of the continued need for the present number of these programs should be undertaken during the coming year.

Engineering/Industrial Technologies

The placement rate for the engineering/industrial technologies for 1983 was 72.3 percent (Table 4). While this is substandard, it is an improvement of 2.6 percent over their rate in 1982. Of the thirty-five programs in the engineering/industrial category, seventeen were below the 75 percent standard in 1982. One of these, Diesel Technology, has been below 75 pecent for four consecutive years. It should be noted, however, that while Diesel Technology was below the standard, it did improve by 27.5 percent over the 1982 rate. Fifteen programs did manage to improve their technical

TABLE 2
1982 - 1983
TECHNICAL PROGRAM GRADUATE JOB PLACEMENT
BUSINESS PROGRAMS

	NUMBER OF PROGRAMS	GRADUATES	RESPONDENTS	AVAILABLE FOR EMPLOYMENT	NUMBER EMPLOYED IN TECHNICAL FIELD	PERCENT EMPLOYED IN TECHNICAL FIELD	NUMBER EMPLOYED OUTSIDE FIELD	PERCENT EMPLOYED OUTSIDE FIELD	NUMBER UNEMPLOYED	PERCENT UNEMPLOYED
ACCOUNTING	36	751	669	575	357	62.1	146	25.4	72	12.5
COMMERCIAL A	5	105	93	82	57	69.5	17	20.7	8	9.8
GRAPHIC ARTS	3	17	16	13	11	84.6	3	23.1	-1	-7.7
INTERIOR DES	1	13	8	8	6	75.0	1	12.5	1	12.5
BUSINESS MAN	40	1050	899	767	559	72.9	144	18.8	64	8.3
PURCHASING	1	14	12	12	10	83.3	2	16.7	0	0.0
RETAIL	8	60	59	46	39	84.8	3	6.5	4	8.7
WHOLESALE	1	1	1	1	1	100.0	0	0.0	0	0.0
DATA PROCESS	36	1518	1357	1179	703	59.6	304	25.8	172	14.6
FINANCIAL MA	14	93	88	74	60	81.1	10	13.5	4	5.4
HOSPITALITY	7	93	82	68	58	85.3	8	11.8	2	2.9
CULINARY ART	2	11	10	10	8	80.0	2	20.0	0	0.0
FOOD SERVICE	3	11	11	10	9	90.0	1	10.0	0	0.0
LEGAL ASSIST	2	32	29	25	17	68.0	6	24.0	2	8.0
MARKETING	10	220	198	167	118	70.7	35	21.0	14	8.4
ADVERTISING	1	4	4	4	2	50.0	2	50.0	0	0.0
INDUSTRIAL M	2	49	28	25	16	64.0	7	28.0	2	8.0
INSURANCE	1	6	6	5	5	100.0	0	0.0	0	0.0
SECRETARIAL	44	784	718	662	536	81.0	65	9.8	61	9.2
COURT REPORT	3	23	23	20	14	70.0	3	15.0	3	15.0
REAL ESTATE	11	35	31	27	16	59.3	8	29.6	3	11.1
TRANSPORTATI	4	49	39	32	19	59.4	8	25.0	5	15.6
LOGISTICS	1	4	4	4	4	100.0	0	0.0	0	0.0
TOTAL	236	4943	4385	3816	2625	68.8	775	20.3	416	10.9

TABLE 3
PLACEMENT BY PROGRAM COMPARED TO PREVIOUS TWO YEARS

Program	Technical Placment 1981	1982	1983
BUSINESS			
Accounting	68.5	66.5	62.1
Advertising	66.7	40.0	50.0
Business Management	68.8	66.7	72.9
Commercial Art	50.0	68.5	69.5
Computer Programming/Data Processing	72.0	62.5	59.6
Financial Management	72.6	62.5	81.1
Graphic Arts	58.8	72.7	84.6
Hospitality Management	83.7	85.7	85.3
Interior Design	66.7	100.0	75.0
Legal Assisting	58.3	81.2	68.0
Marketing	73.1	79.2	70.7
Real Estate	62.7	71.4	59.3
Retail Management	72.8	77.4	84.8
Secretarial	86.1	81.9	81.0
Transportation	74.5	69.0	59.4
ENGINEERING			
Architectural	64.9	62.5	62.2
Automotive	60.0	61.7	78.7
Aviation	78.1	61.5	59.4
Ceramic	91.7	77.3	90.0
Civil/Construction	73.1	73.6	74.3
Climate Control	79.4	89.7	81.1
Diesel	57.1	42.1	69.6
Electrical/Electronics	81.4	67.8	70.5
Heat Processing	100.0	66.7	61.1
Industrial Engineering	75.0	83.8	78.9
Industrial Graphics	57.9	76.9	76.0
Manufacturing	76.3	61.1	85.0
Mechanical	89.2	72.5	70.7
Nuclear	83.3	100.0	100.0
Petroleum	76.5	68.8	85.7
Plastics/Chemical	85.3	72.2	66.7
Welding	40.0	73.3	34.4
HEALTH			
Animal Health	86.2	79.7	95.0
Dental Hygiene	92.4	96.7	97.5
Dental Laboraory	79.2	81.8	87.0
Dietetics	80.0	57.7	67.5
Emergency Medical	100.0	80.0	80.0
Medical Assisting	74.2	75.4	72.4
Medical Laboratory	92.5	87.5	80.1

TABLE 3
PLACEMENT BY PROGRAM COMPARED TO PREVIOUS TWO YEARS

Program	Technical Placement 1981	1982	1983
HEALTH (Continued)			
Medical Records	84.8	87.1	83.0
Mental Health	72.5	73.0	79.7
Nursing	96.9	97.0	96.5
Occupational Therapy Asstg.	100.0	100.0	100.0
Ophthalmic	100.0	90.0	85.7
Optometric	88.2	87.5	92.9
Physical Therapy Assisting	100.0	100.0	93.3
Physician Assisting	91.7	75.0	81.8
Radiologic	97.8	93.7	96.7
Respiratory Therapy	99.2	99.2	98.1
Surgical Assisting	90.0	81.8	74.2
AGRICULTURAL/NATURAL RESOURCES			
Agricultural Business	92.1	80.0	71.4
Agricultural Laboratory	83.3	83.3	-
Agricultural Materials	78.6	66.7	42.9
Agricultural Power	100.0	83.3	66.7
Agricultural Production	50.0	100.0	77.8
Conservation	75.0	100.0	66.7
Crop Management	87.5	75.0	50.0
Dairy Manaement	91.7	91.3	88.0
Environmental Control/ Protection	70.0	95.5	59.1
Environmental/Nat. Res. Sc.	60.0	95.5	-
Floriculture	100.0	68.4	83.3
Food Marketing	80.0	100.0	66.7
Forest Production	77.8	50.0	50.0
Horse Production	83.3	95.7	86.7
Landscape/Turf Management	91.7	91.1	86.8
Livestock Production & Mgmt.	79.4	88.0	86.7
Nursery/Greenhouse Mgmt.	88.6	86.8	96.8
PUBLIC SERVICE			
Broadcasting	76.9	70.0	100.0
Corrections	50.0	36.1	40.0
Early Childhood Development	78.7	76.8	81.8
Educational Services	72.7	-	100.0
Fire Science	77.8	74.3	76.7
Law Enforcement	64.9	62.3	64.4
Library/Instructional Media	73.3	91.7	92.3
Recreation	60.0	87.5	40.0
Safety/Risk Management	80.0	80.0	33.3
Security	100.0	62.5	71.4
Social Services	60.0	61.8	63.4

TABLE 4
1982 - 1983
TECHNICAL PROGRAM GRADUATE JOB PLACEMENT
ENGINEERING PROGRAMS

	NUMBER OF PROGRAMS	GRADUATES	RESPONDENTS	AVAILABLE FOR EMPLOYMENT	NUMBER EMPLOYED IN TECHNICAL FIELD	PERCENT EMPLOYED IN TECHNICAL FIELD	NUMBER EMPLOYED OUTSIDE FIELD	PERCENT EMPLOYED OUTSIDE FIELD	NUMBER UNEMPLOYED	PERCENT UNEMPLOYED
CIVIL CONSTR	16	185	167	109	81	74.3	23	21.1	5	4.6
ELECTRICAL E	34	933	850	691	487	70.5	122	17.7	82	11.9
INDUSTRIAL E	14	122	99	90	71	78.9	13	14.4	6	6.7
MECHANICAL	24	508	471	365	258	70.7	71	19.5	36	9.9
NUCLEAR	1	14	14	13	13	100.0	0	0.0	0	0.0
AUTOMOTIVE	12	108	90	80	63	78.7	10	12.5	7	8.8
DIESEL	2	26	25	23	16	69.6	4	17.4	3	13.0
AVIATION ENG	4	53	37	32	19	59.4	13	40.6	0	0.0
ARCHITECTURA	7	80	71	45	28	62.2	14	31.1	3	6.7
SURVEYING	1	2	2	2	2	100.0	0	0.0	0	0.0
DRAFTING DES	15	132	125	113	80	70.8	18	15.9	15	13.3
MODELING	1	8	8	8	2	25.0	3	37.5	3	37.5
AVIONICS	1	3	3	3	2	66.7	1	33.3	0	0.0
BIOMEDICAL E	2	21	19	18	14	77.8	3	16.7	1	5.6
ELECRTIC POW	1	20	18	16	14	87.5	2	12.5	0	0.0
ELECTRO-MECH	9	111	91	77	54	70.1	18	23.4	5	6.5
LASER OPTICS	1	10	10	10	9	90.0	1	10.0	0	0.0
TELECOMMUNIC	2	25	16	13	10	76.9	1	7.7	2	15.4
ENERGY MGT	1	14	13	6	6	100.0	0	0.0	0	0.0
INDUSTRIAL G	4	89	82	75	57	76.0	12	16.0	6	8.0
INDUSTRIAL L	2	18	14	13	13	100.0	0	0.0	0	0.0
SCI MEASUREM	1	8	6	5	4	80.0	1	20.0	0	0.0
MANUFACTURIN	12	115	95	80	68	85.0	8	10.0	4	5.0
CERAMIC	1	20	20	20	18	90.0	2	10.0	0	0.0
INDUSTRIAL M	4	23	21	19	10	52.6	7	36.8	2	10.5

TABLE 4
1982 - 1983
TECHNICAL PROGRAM GRADUATE JOB PLACEMENT
ENGINEERING PROGRAMS

	NUMBER OF PROGRAMS	GRADUATES	RESPONDENTS	AVAILABLE FOR EMPLOYMENT	NUMBER EMPLOYED IN TECHNICAL FIELD	PERCENT EMPLOYED IN TECHNICAL FIELD	NUMBER EMPLOYED OUTSIDE FIELD	PERCENT EMPLOYED OUTSIDE FIELD	NUMBER UNEMPLOYED	PERCENT UNEMPLOYED
PACKAGING	1	8	8	5	5	100.0	0	0.0	0	0.0
QUALITY CONT	2	12	10	10	10	100.0	0	0.0	0	0.0
WELDING	6	35	35	32	11	34.4	18	56.2	3	9.4
CLIMATE CONT	4	51	42	37	30	81.1	2	5.4	5	13.5
HEAT PROCESS	1	26	22	18	11	61.1	4	22.2	3	16.7
METALLURGICA	1	6	6	4	2	50.0	2	50.0	0	0.0
PLANT MAINTE	1	8	8	6	4	66.7	2	33.3	0	0.0
MINING	1	2	2	1	1	100.0	0	0.0	0	0.0
PETROLEUM	1	17	15	14	12	85.7	1	7.1	1	7.1
PLASTICS-CHE	5	39	38	24	16	66.7	5	20.8	3	12.5
TOTAL	195	2852	2553	2077	1501	72.3	381	18.3	195	9.4

placement rating over 1982's figures. The programs in this category most severely affected by the troubled economy included:

Modeling	-	25.0% (down from 40.0% in 1982)
Welding	-	34.4% (down by more than 38%)
Metallurgical	-	50.0% (down by 12.5%)
Industrial Management	-	52.6% (down from 81.2%)
Aviation	-	59.4% (down from 61.5%)

There were also four programs added to this category. They are Biomedical Engineering, Electric Power, Laser Optics, and Scientific Measurement.

Health Technologies

The graduates of the health technologies have shown the highest levels of technical employment since the beginnings of this survey. The 1983 record was no exception, with 92.1 percent of the graduates of the 117 health technology programs across the state reporting employment in their technology (Table 5). This placement rate was only slightly lower than the 1982 record of 92.8 percent. Technical placement continues to indicate high demand for allied health associate degree technical graduates, despite increased output. The total number of associate degrees granted in the health technologies increased by more than 6 percent from the 1982 level. Only three health technology programs placed fewer than 75 percent of their graduates in jobs related to their training. Dietetics, although below the standard for the second year, improved its technical

TABLE 5
1982 - 1983
TECHNICAL PROGRAM GRADUATE JOB PLACEMENT
HEALTH TECHNOLOGIES PROGRAMS

	NUMBER OF PROGRAMS	GRADUATES	RESPONDENTS	AVAILABLE FOR EMPLOYMENT	NUMBER EMPLOYED IN TECHNICAL FIELD	PERCENT EMPLOYED IN TECHNICAL FIELD	NUMBER EMPLOYED OUTSIDE FIELD	PERCENT EMPLOYED OUTSIDE FIELD	NUMBER UNEMPLOYED	PERCENT UNEMPLOYED
ANIMAL HEALT	2	70	70	60	57	95.0	3	5.0	0	0.0
DENTAL HYGIE	8	158	138	122	119	97.5	1	.8	2	1.6
DENTAL LABOR	2	33	26	23	20	87.0	2	8.7	1	4.3
DIETETIC	4	50	46	40	27	67.5	7	17.5	6	15.0
EMERGENCY ME	6	26	26	25	20	80.0	4	16.0	1	4.0
MEDICAL ASSI	10	141	133	123	89	72.4	21	17.1	13	10.6
MEDICAL LABO	14	217	208	191	153	80.1	18	9.4	20	10.5
MEDICAL RECO	7	60	50	47	39	83.0	4	8.5	4	8.5
MENTAL HEALT	6	96	87	74	59	79.7	12	16.2	3	4.1
NURSING	24	1757	1574	1502	1449	96.5	26	1.7	27	1.8
OCCUPATIONAL	1	11	6	5	5	100.0	0	0.0	0	0.0
RECREATION T	1	8	7	5	4	80.0	1	20.0	0	0.0
OPHTHALMIC	1	13	7	7	6	85.7	1	14.3	0	0.0
OPTOMETRIC A	2	14	14	14	13	92.9	1	7.1	0	0.0
PHYSICAL THE	3	56	45	45	42	93.3	2	4.4	1	2.2
PHYSICIAN AS	2	20	11	11	9	81.8	0	0.0	2	18.2
RADIOLOGIC	11	176	157	151	146	96.7	1	.7	4	2.6
RESPIRATORY	7	122	108	106	104	98.1	1	.9	1	.9
SURGICAL	5	93	78	66	49	74.2	10	15.2	7	10.6
DENTAL ASSIS	1	2	2	1	0	0.0	0	0.0	1	100.0
TOTAL	117	3123	2793	2618	2410	92.1	115	4.4	93	3.6

placement rate by nearly 10 percent. The other two programs below the standard were Medical Assisting and Surgical Assisting with rates of 72.4 and 74.2 percent, respectively.

Agricultural/Natural Resources Technologies

The agricultural and natural resources technologies accounted for less than 4.0 percent of all technical associate degrees awarded during the 1982-83 academic year. The category as a whole had a technical placement rate of only 65.5 percent (Table 6). Eleven of the twenty program titles were below the 75 percent standard. Several of the programs had only small declines and three - Forest Management, Nursery/Greenhouse, and Floriculture - improved on the 1982 rating.

Public Service Technologies

The public service technologies have been afflicted with poor technical job placement for several years. In partial response to the problem, the system has reduced the number of programs offered, and the number of degrees awarded in public service technologies has decreased each year since 1979. Even with reduced production, however, the entire category placed only 69.7 percent of its graduates in the technical area for which they were trained, more than one-fifth of the public service graduates were placed in unrelated jobs and 8.8 percent were unable to find jobs at all (Table 7).

Serious placement problems were observed in eight programs. Four of these - Law Enforcement, Security,

TABLE 6
1982 - 1983
TECHNICAL PROGRAM GRADUATE JOB PLACEMENT
AGRICULTURAL - NATURAL RESOURCES PROGRAMS

	NUMBER OF PROGRAMS	GRADUATES	RESPONDENTS	AVAILABLE FOR EMPLOYMENT	NUMBER EMPLOYED IN TECHNICAL FIELD	PERCENT EMPLOYED IN TECHNICAL FIELD	NUMBER EMPLOYED OUTSIDE FIELD	PERCENT EMPLOYED OUTSIDE FIELD	NUMBER UNEMPLOYED	PERCENT UNEMPLOYED
AGRI BUSINES	3	39	37	35	25	71.4	8	22.9	2	5.7
AGRI MATERIA	1	13	12	7	3	42.9	4	57.1	0	0.0
AGRI POWER	1	11	11	9	6	66.7	3	33.3	0	0.0
AGRI PRODUCT	5	16	12	9	7	77.8	0	0.0	2	22.2
AGRI RESEARC	1	7	7	6	4	66.7	1	16.7	1	16.7
AGRONOMIC BU	1	13	12	11	9	81.8	2	18.2	0	0.0
CROP MGT	1	16	15	14	7	50.0	5	35.7	2	14.3
DAIRY MGT	1	28	28	25	22	88.0	2	8.0	1	4.0
ENVT CONTROL	3	31	26	22	13	59.1	7	31.8	2	9.1
FOREST MGT	1	24	24	20	14	70.0	4	20.0	2	10.0
RECLAMATION	1	0	0	0	0	.	0	.	0	.
PARKS AND RE	3	121	114	94	28	29.8	40	42.6	26	27.7
CONSERVATION	1	4	4	3	2	66.7	1	33.3	0	0.0
FOOD MARKETI	1	3	3	3	2	66.7	1	33.3	0	0.0
FOREST PRODU	1	3	3	2	1	50.0	1	50.0	0	0.0
HORSE PRODUC	1	18	18	15	13	86.7	0	0.0	2	13.3
LANDSCAPE-TU	2	45	44	38	33	86.8	4	10.5	1	2.6
LIVESTOCK MG	1	18	17	15	13	86.7	1	6.7	1	6.7
NURSERY-GREE	2	32	31	31	30	96.8	0	0.0	1	3.2
FLORICULTURE	1	20	20	18	15	83.3	0	0.0	3	16.7
TOTAL	32	462	438	377	247	65.5	84	22.3	46	12.2

TABLE 7
1982 - 1983
TECHNICAL PROGRAM GRADUATE JOB PLACEMENT
PUBLIC SERVICE TECHNOLOGIES PROGRAMS

	NUMBER OF PROGRAMS	GRADUATES	RESPONDENTS	AVAILABLE FOR EMPLOYMENT	NUMBER EMPLOYED IN TECHNICAL FIELD	PERCENT EMPLOYED IN TECHNICAL FIELD	NUMBER EMPLOYED OUTSIDE FIELD	PERCENT EMPLOYED OUTSIDE FIELD	NUMBER UNEMPLOYED	PERCEN UNEMPLOYE
BROADCASTING	1	11	11	5	5	100.0	0	0.0	0	0.
EDUCATIONAL SERV	1	1	1	1	1	100.0	0	0.0	0	0.
EARLY CHILDHOOD	10	232	202	170	139	81.8	17	10.0	14	8.
LIBRARY-MEDIA	4	16	16	13	12	92.3	1	7.7	0	0.
FIRE SCIENCE	9	35	33	30	23	76.7	6	20.0	1	3.
LAW ENFORCEMENT	23	361	326	236	152	64.4	65	27.5	19	8.
CORRECTIONS	3	22	18	15	6	40.0	6	40.0	3	20.
SECURITY	3	7	7	7	5	71.4	2	28.6	0	0.
PUBLIC ADMIN	1	1	1	1	0	0.0	1	100.0	0	0.
SAFETY MGT	2	4	4	3	1	33.3	2	66.7	0	0.
SOCIAL SERVICES	10	137	129	93	59	63.4	21	22.6	13	14.
HANDICAPPED SERV	3	24	22	19	13	68.4	4	21.1	2	10.
RECREATNAL SERVI	2	18	13	10	4	40.0	5	50.0	1	10.
TOTAL	72	869	783	603	420	69.7	130	21.6	53	8

Corrections, and Social Services - despite a decrease in production, failed to meet the 75 percent standard for the fourth successive year. This may indicate a need for further reductions in the number of the programs offered across the state. (It should be noted that Law Enforcement, Corrections, and Security did show improvement over 1982's ratings.)

Productivity

Continued effectiveness and continued market demand as evidenced by high job placement rates are not the only concerns the Board of Regents have with regard to technical education programming. The resources available to higher education are scarce. In making judgments concerning program approval and program continuation, the Board of Regents, no less than the institutions, must choose among the educational needs and external demands for programs. Rarely is the Board's decision on program approval based solely upon finding whether it is needed or not needed. Ever more frequently, the program approval/continuation decision will be based upon choices among programs - all of which serve legitimate needs, but not all of which can be funded without the diminution of the quality of the whole. Thus, the decision will not be whether there is need, but how great is the need as compared to those needs to which we are already responding, or to which we would otherwise respond.

It is with this perspective that this report addresses the issue of degree productivity. The question is not

whether a program is good or bad, needed or not needed, but whether an institution's resources should continue to be tied up in a commitment to a program that results in three or four degrees annually. While low degree production does not of itself necessarily indicate inefficiency or that a program is not responding to some need, the number of degrees awarded statewide per program does give the Board of Regents some sense of where there may be excess capacity and some indication of either how critical a need is or how successful we have been in responding to it. Several years ago, a standard of eight graduates annually was adopted as minimally indicative of sufficiently strong response to a need to warrant program continuation.

Table 9 lists programs, by category, which either (a) graduated fewer than eight students per program last year or (b) placed fewer than 75 percent of their students in jobs related to their technology. It is suggested that no additional programs appearing on this list be approved in this coming academic year either because current capacity exceeds student demand, or current output exceeds labor market demand.

TABLE 9
1982 - 1983
TECHNICAL PROGRAM GRADUATE JOB PLACEMENT
LIST OF TWO YEAR PROGRAMS WITH
LESS THAN EIGHT GRADUATES OR
LESS THAN 75% PLACEMENT RATE

	GRADUATES	AVERAGE GRADUATES PER PROGRAM	NUMBER AVAILABLE FOR EMPLOYMENT	NUMBER EMPLOYED IN TECHNICAL FIELD	PERCENT EMPLOYED IN TECHNICAL FIELD	NUMBER EMPLOYED OUTSIDE FIELD	PERCENT EMPLOYED OUTSIDE FIELD	NUMBER NOT EMPLOYED	PERCENT NOT EMPLOYED
XXXXXXXXXXXXXXXX BUSINESS TECHNOLOGIES XXXXXXXXXXXXXXXXXXX									
ACCOUNTING	751	20.9	575	357	62.1	146	25.4	72	12.5
COMMERCIAL ART	105	21.0	82	57	69.5	17	20.7	8	9.8
GRAPHIC ARTS	17	5.7	13	11	84.6	2	15.4	0	0.0
BUSINESS MANAGEM	1050	26.2	767	559	72.9	144	18.8	64	8.3
RETAIL	60	7.5	46	39	84.8	3	6.5	4	8.7
WHOLESALE	1	1.0	1	1	100.0	0	0.0	0	0.0
DATA PROCESSING	1518	42.2	1179	703	59.6	304	25.8	172	14.6
FINANCIAL MANAGE	93	6.6	74	60	81.1	10	13.5	4	5.4
CULINARY ARTS	11	5.5	10	8	80.0	2	20.0	0	0.0
FOOD SERVICE	11	3.7	10	9	90.0	1	10.0	0	0.0
LEGAL ASSISTING	32	16.0	25	17	68.0	6	24.0	2	8.0
MARKETING	220	22.0	167	118	70.7	35	21.0	14	8.4
ADVERTISING	4	4.0	4	2	50.0	2	50.0	0	0.0
INDUSTRIAL MARKE	49	24.5	25	16	64.0	7	28.0	2	8.0
INSURANCE	6	6.0	5	5	100.0	0	0.0	0	0.0
COURT REPORTING	23	7.7	20	14	70.0	3	15.0	3	15.0
REAL ESTATE	35	3.2	27	16	59.3	8	29.6	3	11.1
TRANSPORTATION	49	12.3	32	19	59.4	8	25.0	5	15.6
LOGISTICS	4	4.0	4	4	100.0	0	0.0	0	0.0

TABLE 9
1982 - 1983
TECHNICAL PROGRAM GRADUATE JOB PLACEMENT
LIST OF TWO YEAR PROGRAMS WITH
LESS THAN EIGHT GRADUATES OR
LESS THAN 75% PLACEMENT RATE

	GRADUATES	AVERAGE GRADUATES PER PROGRAM	NUMBER AVAILABLE FOR EMPLOYMENT	NUMBER EMPLOYED IN TECHNICAL FIELD	PERCENT EMPLOYED IN TECHNICAL FIELD	NUMBER EMPLOYED OUTSIDE FIELD	PERCENT EMPLOYED OUTSIDE FIELD	NUMBER NOT EMPLOYED	PERCENT NOT EMPLOYED
XXXXXXXXXXXXXXXXX ENGINEERING TECHNOLOGIES XXXXXXXXXXXXXXXXX									
CIVIL CONSTRUCTI	185	11.6	109	81	74.3	23	21.1	5	4.6
ELECTRICAL ELECT	933	27.4	691	487	70.5	122	17.7	82	11.9
MECHANICAL	508	21.2	365	258	70.7	71	19.5	36	9.9
DIESEL	26	13.0	23	16	69.6	4	17.4	3	13.0
AVIATION ENG	53	13.3	32	19	59.4	13	40.6	0	0.0
ARCHITECTURAL	80	11.4	45	28	62.2	14	31.1	3	6.7
SURVEYING	2	2.0	2	2	100.0	0	0.0	0	0.0
DRAFTING DESIGN	132	8.8	113	80	70.8	18	15.9	15	13.3
MODELING	8	8.0	8	2	25.0	3	37.5	3	37.5
AVIONICS	3	3.0	3	2	66.7	1	33.3	0	0.0
ELECTRO-MECHANIC	111	12.3	77	54	70.1	18	23.4	5	6.5
INDUSTRIAL MGT	23	5.7	19	10	52.6	7	36.8	2	10.5
QUALITY CONTROL	12	6.0	10	10	100.0	0	0.0	0	0.0
WELDING	35	5.8	32	11	34.4	18	56.2	3	9.4
HEAT PROCESSING	26	26.0	18	11	61.1	4	22.2	3	16.7
METALLURGICAL	6	6.0	4	2	50.0	2	50.0	0	0.0
PLANT MAINTENANC	8	8.0	6	4	66.7	2	33.3	0	0.0
MINING	2	2.0	1	1	100.0	0	0.0	0	0.0
PLASTICS-CHEMICA	39	7.8	24	16	66.7	5	20.8	3	12.5

TABLE 9
1982 - 1983
TECHNICAL PROGRAM GRADUATE JOB PLACEMENT
LIST OF TWO YEAR PROGRAMS WITH
LESS THAN EIGHT GRADUATES OR
LESS THAN 75% PLACEMENT RATE

	GRADUATES	AVERAGE GRADUATES PER PROGRAM	NUMBER AVAILABLE FOR EMPLOYMENT	NUMBER EMPLOYED IN TECHNICAL FIELD	PERCENT EMPLOYED IN TECHNICAL FIELD	NUMBER EMPLOYED OUTSIDE FIELD	PERCENT EMPLOYED OUTSIDE FIELD	NUMBER NOT EMPLOYED	PERCENT NOT EMPLOYED
XXXXXXXXXXXXX HEALTH TECHNOLOGIES XXXXXXXXXXXXXXXXXXXXXX									
DIETETIC	50	12.5	40	27	67.5	7	17.5	6	15.0
EMERGENCY MEDICA	26	4.3	25	20	80.0	4	16.0	1	4.0
MEDICAL ASSISTIN	141	14.1	123	89	72.4	21	17.1	13	10.6
OPTOMETRIC ASSIS	14	7.0	14	13	92.9	1	7.1	0	0.0
SURGICAL	93	18.6	66	49	74.2	10	15.2	7	10.6
DENTAL ASSISTING	2	2.0	1	0	0.0	0	0.0	1	100.0

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TABLE 9
1982 - 1983
TECHNICAL PROGRAM GRADUATE JOB PLACEMENT
LIST OF TWO YEAR PROGRAMS WITH
LESS THAN EIGHT GRADUATES OR
LESS THAN 75% PLACEMENT RATE

	GRADUATES	AVERAGE GRADUATES PER PROGRAM	NUMBER AVAILABLE FOR EMPLOYMENT	NUMBER EMPLOYED IN TECHNICAL FIELD	PERCENT EMPLOYED IN TECHNICAL FIELD	NUMBER EMPLOYED OUTSIDE FIELD	PERCENT EMPLOYED OUTSIDE FIELD	NUMBER NOT EMPLOYED	PERCENT NOT EMPLOYED
XXXXXXXXXXXXXXXXXX PUBLIC SERVICE TECHNOLOGIES XXXXXXXXXXXXXXXXXXXXXX									
EDUCATIONAL SERV	1	1.0	1	1	100.0	0	0.0	0	0.0
LIBRARY-MEDIA	16	4.0	13	12	92.3	1	7.7	0	0.0
FIRE SCIENCE	35	3.9	30	23	76.7	6	20.0	1	3.3
LAW ENFORCEMENT	361	15.7	236	152	64.4	65	27.5	19	8.1
CORRECTIONS	22	7.3	15	6	40.0	6	40.0	3	20.0
SECURITY	7	2.3	7	5	71.4	2	28.6	0	0.0
PUBLIC ADMIN	1	1.0	1	0	0.0	1	100.0	0	0.0
SAFETY MGT	4	2.0	3	1	33.3	2	66.7	0	0.0
SOCIAL SERVICES	137	13.7	93	59	63.4	21	22.6	13	14.0
HANDICAPPED SERV	24	8.0	19	13	68.4	4	21.1	2	10.5
RECREATNAL SERVI	18	9.0	10	4	40.0	5	50.0	1	10.0

TABLE 9
1982 - 1983
TECHNICAL PROGRAM GRADUATE JOB PLACEMENT
LIST OF TWO YEAR PROGRAMS WITH
LESS THAN EIGHT GRADUATES OR
LESS THAN 75% PLACEMENT RATE

	GRADUATES	AVERAGE GRADUATES PER PROGRAM	NUMBER AVAILABLE FOR EMPLOYMENT	NUMBER EMPLOYED IN TECHNICAL FIELD	PERCENT EMPLOYED IN TECHNICAL FIELD	NUMBER EMPLOYED OUTSIDE FIELD	PERCENT EMPLOYED OUTSIDE FIELD	NUMBER NOT EMPLOYED	PERCENT NOT EMPLOYED
XXXXXXXXXXXXXXXXX AGRICULTURE AND NATURAL RESOURCES XXXXXXXXXXXXXXXXX									
AGRI BUSINESS	39	13.0	35	25	71.4	8	22.9	2	5.7
AGRI MATERIALS	13	13.0	7	3	42.9	4	57.1	0	0.0
AGRI POWER	11	11.0	9	6	66.7	3	33.3	0	0.0
AGRI PRODUCTION	16	3.2	9	7	77.8	0	0.0	2	22.2
AGRI RESEARCH LA	7	7.0	6	4	66.7	1	16.7	1	16.7
CROP MGT	16	16.0	14	7	50.0	5	35.7	2	14.3
ENVT CONTROL PRO	31	10.3	22	13	59.1	7	31.8	2	9.1
FOREST MGT	24	24.0	20	14	70.0	4	20.0	2	10.0
PARKS AND RECREA	121	40.3	94	28	29.8	40	42.6	26	27.7
CONSERVATION	4	4.0	3	2	66.7	1	33.3	0	0.0
FOOD MARKETING	3	3.0	3	2	66.7	1	33.3	0	0.0
FOREST PRODUCTS	3	3.0	2	1	50.0	1	50.0	0	0.0

SUMMARY

Ohio's associate degree graduates in 1983 experienced an unemployment rate that, while not what might be hoped for, was an improvement over 1982. Their unemployment rate, however, was only slightly more than half the national rate for persons aged 20-24.

The problems and concerns identified with the peformance of particular programs must be viewed with the perspective of the general economic condition of the state and nation in 1983. Nevertheless, the problem areas should be investigated further on a statewide basis in an effort to determine whether these programs are too numerous or are no longer needed. Special attention should be directed toward those programs exhibiting both low productivity and lower than expected technical placement. Appropriate follow-up and use of this data should occur in the coming year during both program approval and program review processes.